AP233
STEP Systems Engineering Project

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Scope of AP233

Systems Engineering from a "Big Picture" Point of View

- Requirements
- Functional structure
- Physical structure and allocation
- Configuration and traceability
- Project and data management
  - Schedule
  - Cost
  - Risk

Consistent with INCOSE's vision of Systems Engineering

AP233 Approach

- AP233 uses a modularized approach
  - Partitioned a large problem space
  - Allows sequential deliveries
  - Develope APIs and Reference Implementations
- Work with other standards organizations
  - OMG’s SysML Team
  - INCOSE

Scope of AP233
Planned Module Sets

- **Requirements--complete**
- ***Structural Models***
- ***Behavioral Models***
  - ***Function-based***
  - ***State-based***
- ***Project Management***
  - ***WBS***
  - ***Scheduling***
  - ***Cost***
  - ***Organizational Structure***
- ***Risk Analysis****
- ***Rules****
- ***Validation and Verification***
- PDM Extensions
- Security
- Data Representation

Legend:
Green-complete, ***Yellow italics***-in process, White-TBD
*Active collaboration with other teams: Risk with AP239, Rules with AP2

Systems Engineering Participants

- NASA - H. Frisch, G. Siebes
- Eurostep – J. U'Ren D. Price, P. Spiby
- OSJTF – D. Hardy
- BAE SYTEMS - J. Johnson
- NIST - P. Denno, A. Barnard-Feeney
- Georgia Tech - R. Peak & Co.
- Boeing - G. Smith
- John Deere - R. Burkhart
- IBM - L. Balmelli
- MoD UK – M. Gibson
- Lockheed Martin - S. Friedenthal
- General Motors - M. Loeffler
- Volvo - M. Lindeblad
- United Technologies - R. Cohen
- Northrop Grumman – R. Wood
- Motorola – R. Bruce, T. Robar
- EADS – H. Eisenmann, R. Eckart
- Syntell – Erik Herzog

Vendors Participating:

- UGS – **TeamCenter Requirements**
- ThreeSL - Cradle
- i-Logix - Statemate, Rhapsody
- Artisan – Real-time Studio
- Vitech - CORE
- Telelogic – Doors
- ITI – QFD

- INCOSE - D. Oliver, M. Dickerson
- OMG - SE DSIG, SysML, DODAF Teams
- NDIA - J. Hollenbach

Systems Engineering
Near-term Plans

- Release AP233 WD2 in Oct 2005
  - Work Breakdown
  - Schedule
  - Structure (system breakdown)
  - Function-based Behavior
  - State-based Behavior
- Test
  - Test data exchanges using AP233/STEP modules
- Complete mapping of STEP/AP233 to DODAF database
- Work with AP239 to get Risk Modules to ballot

Systems Engineering Project
Challenges

- SC4 Management and Rules Changes
  - Recent changes in SC4's timeframes between stages (NWI, WD, CD, DIS, FDIS, IS) have created thresholds that could threaten project cancellation
- Resources
  - Marketing SE project and PDES, Inc. capabilities to potential sponsors - need to close "the deal"
- Infrastructure Support for AP233
  - Resource constraints limiting updates and bugfixes of key infrastructure pieces.

Systems Engineering
Project Assessment

- AP233 continues to gain visibility
- Vendor involvement in implementations continues
- Industry groups (e.g., INCOSE, NDIA) show interest
- Testing is important—initial plans made for a Systems Engineering Implementors Forum (SE-IF)
- Resources to complete the Project are tight

OSJTF Sponsored Work

(Open Systems Joint Task Force)

Linking DODAF-SysML-STEP

DODAF

specifies requirements for

OMG SysML

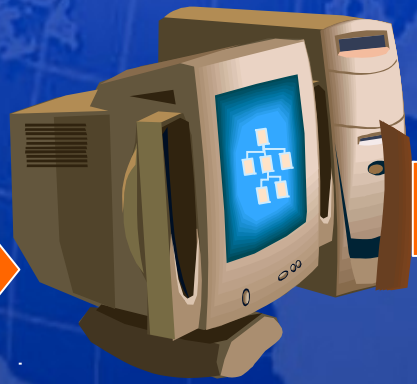
Other SE Views

ISO 10303
STEP Standard

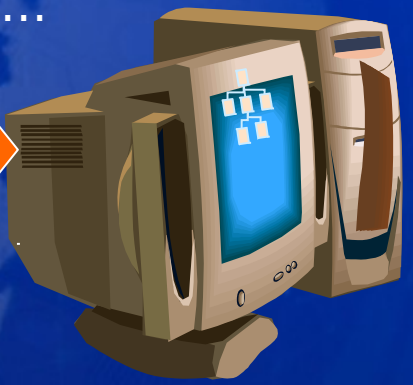
Detailed Design,
Manufacturing,
Life Cycle Suppor
...

AP233

AP233



AP2XX



CADM

CADM

CADM = Core Architecture Data Model
DARS = DoD Architecture Repository Sys